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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/058,591

Applicant(s)

KAVNER, DOUGLAS M.

Examiner

Daniel Previl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2002.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-16 and 18-38 is/are rejected.
7) ☒ Claim(s) 17 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 13-16, 18-28, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu (US 6, 078,895)) in view of Dwyer et al. (US 6,140,941).

Regarding claim 1, Ryu discloses a method of determining a vehicle trip on a roadway (abstract) comprising: providing a plurality of vehicle detections (vehicle detectors 132, 112, 113) from a plurality of gateways (entrance lane and exit lane) (col. 3, lines 11-18 and lines 32-36); determining a maximum travel time (overall running time) between corresponding pairs of the plurality of gateways (col. 4, lines 21-25); correlating corresponding pairs of the plurality of vehicle detections (vehicle detectors 112, 113, 132) by determining that a travel time (average running time) between each of the gateways (entrance and exit toll gates) of each of the corresponding pairs of detections is less (different) than a corresponding maximum travel time (overall running time) (col. 4, lines 10-33); determining the boundaries of the trip (15 minutes) (col. 4, lines 41-46).

Ryu discloses all the limitations above but fails to explicitly disclose the step of determining a plurality of chainable detections.

However, Dwyer discloses a plurality of chainable detections (a plurality of transponder locator antennas 27 and vehicle detectors 26) (fig. 2A; col. 4, lines 60-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claim 2, the above combination discloses all the limitations in claim 1 and Dwyer further discloses one license plate image corresponding to one of the plurality of vehicle detections (col. 4, lines 40-49). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would image accurately license plate corresponding to one of the plurality of detections to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claim 3, the above combination discloses all the limitations in claim 1 and Dwyer further discloses determining a vehicle license plate number; and processing the at least one license plate image for verifying the vehicle license plate number (col. 8, lines 47-59). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would image accurately license plate corresponding to one of the plurality of detections to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claims 4-7, the above combination discloses all the limitations in claim 1 and Dwyer further discloses the step of filtering a plurality of vehicle transactions for providing the plurality of vehicle detections (col. 8, lines 47-59). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would filter vehicle transactions to one of the plurality of detections to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claim 8, the above combination discloses all the limitations in claim 1 and Dwyer further discloses each of the pair of detections is provided by a corresponding pair of gateways that are disposed logically consistent with the roadway topology (fig. 2A). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claims 13-16, the above combination discloses all the limitations in claim 1 and Dwyer further discloses the plurality of chainable detections to be initially processed (fig. 2A). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claim 18, Ryu discloses the boundaries comprises detecting of the trip (vehicle entrance detector) (fig. 2, ref. 112).

Regarding claims 19-22, the above combination discloses all the limitations in claim 1 and Dwyer further discloses the plurality of chainable detections to be initially processed (fig. 2A). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claims 23-25, the above combination discloses all the limitations in claim 1 and Dwyer further discloses determining a vehicle license plate number; and one license plate image for verifying the vehicle license plate number (col. 8, lines 47-59). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ryu in Dwyer. Doing so would image accurately license plate corresponding to one of the plurality of detections to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claim 26, Dyu discloses a toll gateway sensor (col. 3, lines 7-17).

Regarding claim 27, Dyu discloses a time of the detection and the location of the detection (col. 3, lines 41-45).

Regarding claim 28, Dyu discloses a set of billing policies (toll collector) (col. 2, line 17)

3. Claims 9- 11, are rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu in view of Dwyer and further in view of Ohba et al. (US 6,449,555).

Regarding claim 9, Ryu and Dwyer disclose all the limitations in claim 1 but fail to explicitly disclose the travel time between each of the detections is greater than a minimum travel time.

However, Ohba discloses the travel time between each of the detections is greater than a minimum travel time (col. 5, lines 60-67; col. 6, lines 7-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Ryu and Dwyer. Doing so would calculate accurate the travel time in order to detect the presence of vehicles in toll gates wherein errors in regard to the toll fees can be detected and corrected so that users can save money and time as taught by Ohba (col. 1, lines 52-67).

Regarding claim 10, Ryu and Dwyer disclose all the limitations in claim 1 but fail to explicitly disclose the maximum travel time comprises an incident free maximum travel time.

However, Ohba discloses the maximum travel time comprises an incident free maximum travel time (col. 3, lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Ryu and Dwyer. Doing so would calculate accurately the travel time in order to detect the presence of vehicles in toll gates wherein errors in regard to the toll fees can be detected and corrected so that users can save money and time as taught by Ohba (col. 1, lines 52-67).

Regarding claim 11, Ryu and Dwyer disclose all the limitations in claim 1 but fail to explicitly disclose an expected travel time and the maximum travel time is the longer of the expected travel time and the incident free maximum travel time.

However, Ohba discloses an expected travel time and the maximum travel time is the longer of the expected travel time and the incident free maximum travel time (col. 6, lines 7-15).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Ryu and Dwyer. Doing so would calculate accurately the travel time in order to detect the presence of vehicles in toll gates wherein errors in regard to the toll fees can be detected and corrected so that users can save money and time as taught by Ohba (col. 1, lines 52-67).

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4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ryu et al. and Dwyer et al. in view of Ohba et and further in view of Sakurai et al. (5,675,494).

Regarding claim 12, Ryu, Dwyer and Ohba disclose all the limitations in claim 11 but fail to explicitly disclose traffic incident; and modifying the expected travel time in response to the traffic incident.

However, Sakurai discloses traffic incident; and modifying the expected travel time in response to the traffic incident (col. 1, lines 29-35).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Sakurai in Ryu, Dwyer and Ohba. Doing so would accurately prevent double toll charging so that users can save money as taught by Sakurai (col. 1, lines 29-35).

5. Claims 29-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohba et al. (US 6,449,555) in view of Dwyer et al. (US 6,140,941).

Regarding claim 29, Ohba discloses a method for determining a vehicle trip on a roadway having a plurality of gateways disposed according to a roadway topology (abstract; fig. 1) comprising: providing a model of the topology including gateway connectivity, a plurality of minimum travel times between pairs of gateways and a plurality of incident free maximum travel times between pairs of gateways (fig. 1; col. 6, lines

7-40); providing a set of rules for applying the model (col. 13, lines 2-17); applying the rules (col. 13, lines 2-17).

Ohba discloses all the limitations above but fails to explicitly disclose a plurality of vehicle detections; determining a plurality of chainable vehicle detections forming the trip.

However, Dwyer discloses a plurality of vehicle detections (detectors 26, 27); determining a plurality of chainable vehicle detections forming the trip (fig. 2A).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Dwyer in Ohba. Doing so would accurately detect the presence of vehicles in a toll collection system wherein errors in regard to the toll fees can be detected and corrected so that users can save money and time as taught by Dwyer (col. 1, lines 11-43).

Regarding claim 30, Ohba discloses a plurality of expected travel times between the pairs of gateways (fig. 1).

Regarding claims 31-33, the above combination discloses a plurality of chainable detections for forming a potential trip (fig. 2A). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by

the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

6. Claims 34-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohba et al. in Dwyer et al.

Regarding claim 34, Ohba discloses a toll collection system (abstract) comprising: a plurality of gateways (fig. 1).

Ohba discloses the limitation above but fails to explicitly disclose a trip determination processor comprising: a transaction processor; a vehicle detection correlation processor coupled to the transaction processor; a transaction filter processor coupled to the vehicle detection correlation processor; an end of a trip detection processor coupled to the transaction filter processor; a start of a trip detection processor coupled to the transaction filter processor; and a trip formation processor coupled to the transaction filter processor, the end of a trip detection processor, and the start of a trip detection processor.

However, Dwyer discloses a trip determination processor (time of the entry) (col. 4, lines 28-29) comprising: a transaction processor (col. 8, line 47); a vehicle detection correlation processor coupled to the transaction processor (fig. 1); a transaction filter processor coupled to the vehicle detection correlation processor (col. 8, lines 47-49); an end of a trip (exit) detection processor coupled to the transaction filter processor (col. 8, lines 47-59); a start of a trip (entry) detection processor coupled to

the transaction filter processor (col. 8, lines 47-59); and a trip formation processor coupled to the transaction filter processor, the end of a trip detection processor, and the start of a trip detection processor (col. 8, lines 47-59).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Regarding claims 35-38, the above combination discloses all the limitations in claim 34 and Dwyer discloses a plurality of gateway is adapted for an open ticket tolling system (col. 3, lines 62-65). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Ohba in Dwyer. Doing so would use a plurality of detectors to detect accurately the presence of vehicles enter or exit the gateways to determine efficiently the quantity of trips provided by the vehicle in order to eliminate all the errors in regard to the toll fees, so that users can save money and time as taught Dwyer (col. 1, lines 46-67).

Allowable Subject Matter

7. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: the prior arts fail to teach or make obvious: the step of comparing the current boundary time to the maximum detection time and declaring the end of the trip in response to determining that the current boundary time is greater than that the maximum detection time.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure..

Blomqvist et al. (US 6,109,525) discloses a method and device for registering vehicles in a road toll facility.

Riskin (US 4,555,618) discloses a method and means for collecting highway tolls.

Hassett et al. (US 5,253,162) discloses a shielding field method and apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Previl whose telephone number is 703

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305-1028. The examiner can normally be reached on Monday-Thursday. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 703 305-4717. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel Previl
Examiner
Art Unit 2636

DP
May 13, 2004.



JEFFERY HOFSSASS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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